

# Math 9

## 3.3 Order of Operations

### BEDMAS

Brackets (inside)  
Exponents  
Division/Multiplication  
Addition/Subtraction

Reminder:  
can only use  
exponent laws  
on powers  
with same base

### Vocabulary

$$\begin{array}{c} \text{base} \\ \downarrow \\ 3 (2^5) = 3 (2)^5 \\ \uparrow \quad \quad \quad \swarrow \\ \text{Coefficient} \quad \quad \text{power} \end{array}$$

### Examples

a)  $4 \times 3^2 = 4 \times 3 \cdot 3 = 36$

b)  $6(-2)^3 = 6 \cdot -2 \cdot -2 \cdot -2 = -48$

c)  $-7^2 = -7 \cdot 7 = -49$   
     $\nwarrow$  not being squared.

d)  $4^2 + (-4^2) = 16 + (-16) = 0$

e)  $8(5+2)^2 - 12 \div 2^2$   
    B      $= 8(7)^2 - 12 \div 2^2$   
    E      $= 8(49) - 12 \div 4$   
    M/D    $= 392 - 3$   
    A/S    $= 389$

with in brackets, use BEDMAS too  
 $(-15-16)$   
 $(-31)$

$$f) -2(-15-4^2) + 4(2+3)^3$$

$$B = -2(-31) + 4(5)^3$$

$$E = -2(-31) + 4(125)$$

$$M/D = 62 + 500$$

$$A/S = 562$$

you try:

$$g) -2(-3)^2 =$$

$$h) -5 + 3(2)^3 = -5 + 3(8)$$

$$= -5 + 24$$

$$= 19$$

E

M/D

A/S

$$i) 4^2 - 8 \div 2 + (-3^2)$$

$$= 16 - 8 \div 2 + (-9)$$

$$= 16 - 4 - 9$$

$$= 3$$

E

M/D

A/S

$$j) -3(\widetilde{3^2 - 3})^2 + 2(\widetilde{1 - 3^2})$$

$$= -3(6)^2 + 2(-8)$$

$$= -3(36) + 2(-8)$$

$$= -108 - 16$$

$$= -124$$

Practice pg 111 # 5-12, 14, 17-19

+ Quiz in 2 classes (Friday Oct 30)